

WHAT IS CLAIMED IS:

1. A color toner for forming an image comprising:

a continuous phase of a resin containing a urea-modified polyester resin; and

a modified resin dispersed in the continuous phase,
wherein the modified resin contains:

a release polymer portion containing a release polymer; and

a modified portion containing a plurality of vinyl monomer units, the modified portion having an average ester group concentration of 8 % by weight to 30 % by weight,

wherein the color toner is formed by a process comprising:

emulsifying and suspending an organic solvent containing a modified polyester resin capable of forming a urea bond in an aqueous medium under an existence of a modified resin and a release agent;

allowing addition polymerization;

removing the organic solvent; and

washing.

2. A color toner for forming an image according to Claim 1, wherein the process comprises:

emulsifying and suspending an organic solvent containing a modified polyester resin capable of forming a urea bond, a modified resin, and a release agent dissolved therein in an aqueous medium;

allowing addition polymerization;

removing the organic solvent; and
washing.

3. A color toner for forming an image according to Claim 1, wherein at least a portion of the release agent is embraced in the modified resin.
4. A color toner for forming an image according to Claim 1, wherein the modified resin is a graft copolymer having the release polymer as a main chain thereof and the modified portion containing a plurality of vinyl monomer units as side chains thereof, wherein the modified portion has an average ester group concentration of 8 % by weight to 30 % by weight.
5. A color toner for forming an image according to Claim 1, wherein the average ester group concentration is 10 % by weight to 25 % by weight.
6. A color toner for forming an image according to Claim 1, wherein the release polymer is a wax.
7. A color toner for forming an image according to Claim 6, wherein the wax is at least one of a polyolefin wax and a natural wax.
8. A color toner for forming an image according to Claim 1, wherein

the wax is a polyolefin wax having a number average molecular weight of from 500 to 15000 and a weight average molecular weight of from 800 to 100000.

9. A color toner for forming an image according to Claim 1, wherein the release polymer has a softening point of from 80 °C to 170 °C.
10. A color toner for forming an image according to Claim 1, wherein the vinyl monomer unit comprising at least one of alkyl ester monomer unit of unsaturated carboxylic acid and vinyl ester monomer unit.
11. A color toner for forming an image according to Claim 1, wherein the resin forming the continuous phase comprises a component insoluble in tetrahydrofuran, and the tetrahydrofuran-insoluble component has a weight average molecular weight by gel permeation chromatography of 10000 to 50000.
12. A color toner for forming an image according to Claim 1, wherein the release agent is at least one selected from carnauba wax, montan wax, oxidized rice wax, and synthetic wax.
13. A color toner for forming an image according to Claim 1, wherein an amount of the modified resin X in the toner and an amount of the release agent Y in the toner satisfy the following formula:

$$0.1 \leq Y/X \leq 3.$$

14. A color toner for forming an image according to Claim 1, wherein the weight average particle diameter is from 2.5 μm to 8.0 μm .

15. A color toner for forming an image according to Claim 1, wherein the modified polyester resin capable of forming a urea bond is a prepolymer having a isocyanate group; and the modified polyester resin is emulsified and suspended under an existence of an amine, and allowed to react in addition polymerization.

16. A color toner for forming an image according to Claim 1, wherein the step of emulsifying and suspending in the aqueous medium is conducted under an existence of a colorant, in addition to the existence of the modified resin and the release agent.

17. A color toner for forming an image according to Claim 16, a masterbatch is used as the colorant, the masterbatch being formed in advance by kneading a resin and a colorant with water.

18. A double component developing agent comprising:
a color toner for forming an image; and
a carrier,

wherein the color toner for forming an image contains:

a continuous phase of a resin containing a urea-modified

polyester resin; and

a modified resin dispersed in the continuous phase,

wherein the modified resin contains:

a release polymer portion containing a release polymer; and

a modified portion containing a plurality of vinyl monomer units, the modified portion having an average ester group concentration of 8 % by weight to 30 % by weight,

wherein the color toner is formed by a process comprising:

emulsifying and suspending an organic solvent containing a modified polyester resin capable of forming a urea bond in an aqueous medium under an existence of a modified resin and a release agent;

allowing addition polymerization;

removing the organic solvent; and

washing.

19. A toner container comprising a color toner for forming an image filling the toner container, the color toner for forming an image containing:

a continuous phase of a resin containing a urea-modified polyester resin; and

a modified resin dispersed in the continuous phase,

wherein the modified resin contains:

a release polymer portion containing a release polymer; and

a modified portion containing a plurality of vinyl monomer units, the modified portion having an average ester group

concentration of 8 % by weight to 30 % by weight,

wherein the color toner is formed by a process comprising:

emulsifying and suspending an organic solvent containing a modified polyester resin capable of forming a urea bond in an aqueous medium under an existence of a modified resin and a release agent;

allowing addition polymerization;

removing the organic solvent; and

washing.

20. An image forming apparatus comprising:

a latent image carrier;

a charger which charges the latent image carrier;

an exposer which exposes imagewise upon the latent image carrier charged by the charger so as to form an electrostatic latent image;

an image developer which includes a toner-holding container attached thereon which supplies a developing agent to the electrostatic latent image, the image developer rendering the electrostatic image visible to form a toner image; and

a transfer which transfers the toner image formed by the image developer to a transfer material,

wherein the toner-holding container holds a developer including a color toner of for forming an image containing:

a continuous phase of a resin containing a urea-modified polyester resin; and

a modified resin dispersed in the continuous phase,
wherein the modified resin contains:

a release polymer portion containing a release polymer; and
a modified portion containing a plurality of vinyl monomer
units, the modified portion having an average ester group
concentration of 8 % by weight to 30 % by weight,

wherein the color toner is formed by a process comprising:

emulsifying and suspending an organic solvent containing a
modified polyester resin capable of forming a urea bond in an aqueous
medium under an existence of a modified resin and a release agent;
allowing addition polymerization;
removing the organic solvent; and
washing.

21. A process cartridge for forming an image, comprising:

a latent image carrier;
at least one of a charger which uniformly charges the surface of
the image carrier and a cleaner which cleans the surface of the image
carrier; and

an image developer which contains a developing agent and
supplies the developing agent over a latent image on the latent image
carrier so as to render the latent image visible to form a toner image,
wherein the process cartridge can be attached to and detached from a
main body of an image forming apparatus as a single unit; and the
developer agent contains a color toner of for forming images

containing:

- a continuous phase of a resin containing a urea-modified polyester resin; and

- a modified resin dispersed in the continuous phase, wherein the modified resin contains:

- a release polymer portion containing a release polymer; and
- a modified portion containing a plurality of vinyl monomer units, the modified portion having an average ester group concentration of 8 % by weight to 30 % by weight,

wherein the color toner is formed by a process comprising:

- emulsifying and suspending an organic solvent containing a modified polyester resin capable of forming a urea bond in an aqueous medium under an existence of a modified resin and a release agent;
- allowing addition polymerization;
- removing the organic solvent; and
- washing.

22. A process for forming an image comprising:

- charging a latent image carrier,
- exposing the charged latent image carrier imagewise so as to form an electrostatic latent image,
- developing the electrostatic latent image by supplying a developing agent to the electrostatic latent image to render the electrostatic latent image visible so as to form a toner image, and
- transferring the toner image which is formed by developing to

a transfer material,
wherein the developing agent includes a color toner for forming an image containing:

a continuous phase of a resin containing a urea-modified polyester resin; and

a modified resin dispersed in the continuous phase,
wherein the modified resin contains:

a release polymer portion containing a release polymer; and
a modified portion containing a plurality of vinyl monomer units, the modified portion having an average ester group concentration of 8 % by weight to 30 % by weight,

wherein the color toner is formed by a process comprising:

emulsifying and suspending an organic solvent containing a modified polyester resin capable of forming a urea bond in an aqueous medium under an existence of a modified resin and a release agent;

allowing addition polymerization;
removing the organic solvent; and
washing.